**ADVISORY COMMITTEE ON BIOTECHNOLOGY AND**

 **21ST CENTURY AGRICULTURE**

***Size and Scope of Risks Working Group Conference call—February 14, 2012***

*Conference Call Summary*

A two-hour conference call was held, with Working Group (WG) members Lynn Clarkson, Michael Funk, Latresia Wilson, Josette Lewis, Isaura Andaluz, Adrienne Massey, Don Cameron and Douglas Gurian-Sherman participating. Michael Schechtman, Executive Secretary, AC21, facilitated the conversation. Four AC21 members who were not members of the working group, Angela Olsen, Greg Jaffe, David Johnson, and Keith Kisling also listened in on the conversation. The goals of call were to: evaluate the status of data gathering and outreach and prospects for obtaining more information; to consider how to present existing data to the AC21, including development of a possible outline of an approach that the AC21 might consider for how to use the data, how to characterize the level of confidence about the accuracy, general applicability, and impact of the data, to draw any conclusions about the need for compensation mechanism(s), and make recommendations to the committee for addressing data gaps or project for future economic risks; and choose a rapporteur for the next plenary session.

WG members were first asked about the potential of receiving other relevant information on size and scope of risks. One member noted that he had sent out 15 letters to Crop Improvement Associations in the Corn Belt, inquiring about potential testing results they might have, which could be scrubbed of confidential business information, on the results of testing non-GE seed for GE presence. Of those 15, 4 responses were perfunctory and one other (from Minnesota) indicated that they do only limited GE testing. He noted that these associations feel a need to protect the confidentiality of data they obtain. In that regard, one state association has provided some relevant data to Chet Boruff, the CEO of the Association of Official Seed Certifying Agencies (AOSCA). He has provided that information to the WG without attribution of the particular state. In brief, the information provided, based on “fair amount of genetic testing annually on non-GE seed corn, seed popcorn, and seed soybeans”, indicates that:

* 95.2% of all non-GE soybeans tested had less than 1% GE and all had less than 2 % GE content;
* 69.4% of all non-GE dent seed corn had no detectable GE presence, 84.5% had less than 1% GE, and 97% of samples had less than 2% GE; and
* 99% of all non-GE popcorn seed had no detectable GE, and 100% had less than 1% detectable.

The take home message is that not many of the Crop Improvement Associations have much information to contribute. What is provided is helpful but not extensive. In general, unintended GE presence is at a fairly low level, though it may be fairly widespread.

He also noted that in conversations with non-GE seed companies about what their required purity level is for seed, most companies were reluctant to divulge that information, but he got the impression that it was often at the 0.2% GE content level. This number differs from the 0.9% level often used in the marketplace for non-GE commodities.

Another member provided an update on his efforts to obtain data from a major Canadian canola producer, one of the world’s largest producers and exporters of canola oil. The company is still a little uneasy on the issue of confidentiality, so it may be that the information will be provided without identification of the company. He noted that he had provided the company with template that Lynn Clarkson had used to make his calculations for economic harm in corn and soy which were discussed at the previous WG meeting, and is hopeful that he will have received a similar analysis from the company prior to the next plenary. He noted that he had learned from the company that they produce lots of GE canola and are attempting to segment a non-GE portion, trying to reach EU and select U.S. markets with that. There is currently roughly a $15/metric ton premium for non-GE canola. A few years ago, GE-based rejection rates of 10-15% were seen, after which the company made significant investments in infrastructure, resulting in a substantial reduction in the rate of rejections. This included tightened identity preservation controls, equipment cleanout procedures, segregated production, handling of non-GE materials only on specified days, specified crop rotation programs for farmers, buffers, etc. They still often find 0.5% GE content in non-GE canola for non-GE markets, but can regularly attain 0.9% GE levels.

One WG member pointed out that together, corn, soy and canola represent good examples to look at because vast majority of their acreage in the U.S. and Canada is GE so potential GE impacts are at the high end and well-established. In addition, the crops represent some range of outcrossing biologies. Based on the results seen even with the relatively high potential for unintended GE presence, good management practices seem pretty effective in limiting unintended GE presence to a fairly low incidence. Another member agreed but cautioned that some other crops having different biology, such as alfalfa, will present some differences. Because alfalfa is a short-lived perennial, costs to farmers to address unintended GE presence arising from self-seeding could be different. There was discussion of management practices to prevent self-seeding and the role of weather variation in how easily farmers in different parts of the country can prevent seed set in their hay fields. Feral alfalfa populations and shared equipment were also mentioned as potential complicating factors. Yet another WG member noted that smaller farmers and smaller cooperatives may have difficulty in using best management practices, or using them successfully, depending on factors outside his/her control. The problem may be greatest for organic farms, which are typically small. One WG member noted that farmers can’t always grow exactly what they want, and some contracts may need to be turned down because of what neighbors are growing that year. In any case, he added, farmers need to communicate well with each other. It was noted that best management practices for seed or for commodity are similar in principle, even though the specifications may differ. Another member noted the problems that can be posed in areas where GE production has a very large footprint on the growing opportunities and/or markets in a particular region. He noted that non-GE sugarbeet cultivation could pose a challenge in some areas. One WG member noted that in the Midwest a fairly small buffer around corn or soy crops is typically sufficient to bring unintended GE presence down to “acceptable” levels. However, if GE crops with new functional traits that affect important properties of the resulting commodity are grown, the situation would be different. Very different management practices would likely be required, and the presence of such crops in an area could foreclose opportunities for neighboring farmers to grow particular crops for consumption.

One WG member noted that GE testing is not routine except post-farm-gate. (It may be conducted at the seed level but data is hard to come by.) This lack of on-farm testing complicates determining whether unintended GE presence arose due to factors outside a farmer’s complete control (e.g., through seed or through pollen from a neighbor’s field) or because of not following best management practices. This could complicate the payment of compensation.

Another WG member offered to check with the California Crop Improvement Association to see if they can provide any testing data. That organization was not included in the earlier outreach for information. WG members agreed that they had probably described the totality of the information they were likely to be able to gather among the sources already discussed, except for the possibility that more data could be obtained from Dr. Kalaitzandonakes’ study on unintended GE presence noted at the last AC21 plenary, once it is formally submitted for publication.

The discussion turned to how to present the data gathered to the AC21 at the upcoming plenary session, and how to address the fact that a considerable amount of the data obtained is unattributed. One member offered her view that to the degree that the WG has data, WG members believe that it comes from credible sources and is best we have available. It should be taken at face value but there is not 100% confidence in any of it. Data has come from significant companies within the industry. Another member noted that some companies have chosen not to contribute data, but they are invited to share additional information if their own information diverges with the data the WG has. Another WG member characterized the data as a work in progress to which other materials can be added. He suggested that a few members of the WG could put together a set of summary bullet points, including the generally low frequency of rejections (in the low single digits), the levels of which are influenced by management practices, etc., and that the WG is continuing to look for more data. The WG could make the case that yes there is a problem, which may not be big in greater scheme of things, but in terms of the Secretary’s charge, some growers aren’t thriving as much as they might.

Another WG member added that an important task would be to consider additional opportunities to support diverse agricultural systems, which might include additional measures USDA could take beyond a compensation system, for example, on emphasizing the importance of following best management practices and the potential for industry and USDA to further develop those practices and support applications for diverse farmers and crops. She noted that the data the WG has seen is data on rates of shipment rejection, which is pretty good data, but actual data on the associated economic losses is not available and has simply been estimated based on loss of premiums. More information is needed on how estimated losses compare to the scale of market specialty crop premiums.

Another WG member noted the complication of price fluctuations, citing the upward fluctuation of the price of organic corn (from $11/bu when the calculations on losses were made a month ago to $13/bu now), due to increased demand by dairy producers for additional feedstocks. Organic soy prices have remained stable at about $20/bu. He noted impacts of unintended GE presence in terms of business planning: it provides an incentive to contract for feed supplies overseas where the worry does not exist. In his view, it would be a bad thing if non-GE and organic production contracts were exported, for example, to India or China. Another WG member noted that there was no indication that this trend was occurring. Instead, best management practices have improved and rejection levels remain fairly low.

Whether there was evidence to back this up or a lack of evidence to the contrary was disputed. Anecdotal evidence about some trending in organic production, and the need for secluded hand pollination of some corn varieties, were noted. This discussion was rejoined by noting that U.S. farmers operate in a competitive world market, even for GE corn and soy, and that even with a policy of supporting farmer diversity it will be impossible to ensure that everyone gets every choice they want.

Some members raised the potential value of research, some funded by USDA, on genetic mechanisms to prevent cross-pollination. Dr. Schechtman noted that this topic had been extensively discussed at the USDA-sponsored gene flow conference this past Fall, and that members had received proceedings from that conference. He also noted that such technology and other Gene Use Restriction Technologies (GURTs) were not without controversy. Another member cautioned against expecting that such technology may not be a long-term broad solution for the entire problem and would not eliminate all sources of unintended GE presence.

A few more statements were proposed as describing the state of the WG’s analyses:

On level of confidence, applicability, and impact, the WG feels confident about the overall accuracy of data received on actual testing and rejection based on unintended presence. Potential economic losses can be estimated but there is no actual data. For crops for which the WG has seen data, the risks of unintended GE presence would be high because of high GE penetration, though not necessarily representative of all crops, and not necessarily representative of the types of traits where sensitivity to unintended GE presence could be significantly different.

A WG member added that it should be mentioned that the data examined is static, not timeline data, and that the WG has no information about past changes and how the future will play out, especially given the growth of organic markets. There may be additional opportunities for the application of best management practices, but there is also the risk of increasing levels or frequency of unintended GE presence. So far the WG only has a snapshot. Another WG member agreed with the characterization as a snapshot, and added concern about the statistical power of the data the WG has examined. For example, were the events reported on independent of each other? How many rows were sampled, from how many farms, and the data derived from how many companies? She suggested that a study would be needed to address such issues and control for variance. She wondered whether the data provided by the Organic Trade Association, from which some of the analyses were based, could be broken down by year among the three-year period of data collection. Another member noted that Dr. Kalaitzandonakes’ study, when it becomes available, will have controlled for some of the variables noted.

Another WG member suggested that there seemed to be consensus on limitations of the data collected so far, but there are some trends that can be pointed to for the future. GE plants with new functional traits may compound existing problems. Additional new GE crops, such as wheat, will also add to the complexities. There is increasing consumer demand for GE testing. Lots of products aren’t being tested for GE presence now, but that picture is changing rapidly. This fact will undoubtedly contribute to increased GE detections. Adding such observations about the future would highlight that problems are likely to be more significant in the future. One WG member raised the issue of unapproved GE varieties, e.g. StarLink, entering commerce, but was informed that such regulatory incidents were outside the AC21’s mandate to discuss.

Another WG member indicated that it is important to emphasize that the data the WG has examined is post-farm-level, so that it is not possible to determine whether the unintended GE presence detected arose because of factors within or outside the farmers’ control. Knowing this information could help inform the work of WG 3. Another noted that the missing information might be difficult to come by, because farmers are unlikely to disclose information about the source of GE materials in their crops, or even its presence, in part because of fear of lawsuits from technology providers. It was noted that it is a matter of contention as to whether farmers have been subjected to any legal actions as a result of GE pollen drift onto their crops. Biotech providers maintain that no such legal actions have been taken, but there is currently a lawsuit in the courts that seeks to prevent tech providers from entering into such litigation.

The potential impacts of future GE corn varieties tolerant to the herbicides 2-4, D and dicamba were noted as another issue that might merit compensation. Dr. Schechtman offered his view that those impacts would be pesticide issues, rather that GE presence issues, and would be outside the scope of the charge. The WG member who raised the issue suggested that the issue was related to the approval of the particular new GE crops. Another WG member said that drought-tolerant GE corn would also be an issue for non-GE corn farmers in the Southwest.

Another example was raised by a WG member of a load of soy that was rejected because of unintended presence of a GE corn variety not approved in all markets. Questions were raised about the appropriateness of this issue, which likely arose post harvest, under the Secretary’s charge relating to farmer compensation.

WG members agreed that an appropriate way to develop and prepare a presentation for the March 5-6, 2012 AC21 plenary would be for Josette Lewis to prepare presentation notes and for Lynn Clarkson to deliver it at the session. Dr. Lewis, who will not be able to attend the March plenary, agreed, and stressed the importance of receiving this meeting summary in a timely fashion so that her report outline could be distributed to WG members for comment in timely fashion.